"Conference on Metabolic Profiling Session: Application to Toxicology"

National Institute of Environmental Health Sciences
Research Triangle Park, NC
May 14-15, 2003

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"Application to Toxicology"

Chair: **Dr. Raymond W. Tennant**
Director, National Center for Toxicogenomics

Speakers:

Dr. Donald Robertson
Pfizer Global Research & Development

Dr. Robert Plumb
Waters Corporation

Dr. Susan Sumner
Paradigm Genetics, Inc.

Dr. Hector C. Keun
Imperial College, University of London


NCT
National Center
for Toxicogenomics

Why have an NCT?

The rapid development of genomic technologies provides an unprecedented opportunity to address highly intractable problems of toxicology and environmental health.

- **The value of surrogate models for prediction of human health risk**
- **Identify biomarkers of incipient adverse effects**
- **Harness the results of diverse research efforts for the collective benefit**
- **Provide a rational basis for risk assessment**
- **Facilitate the identification of specific susceptibility polymorphisms**

What are the Goals of the NCT?

Apply gene expression technology to toxicology.

- **Identify signature patterns of exposure**
- **Identify signature patterns of specific adverse effects (acute toxicity)**
- **Identify biomarkers of toxicity**

Apply gene expression technology to:

- **Facilitate discovery toxicology**
- **Facilitate hypothesis based studies**

Apply gene expression data to the development of a knowledge base of Chemical Effects in Biological Systems (CEBS)

A Strategy for Toxicogenomics

Short-term Goals

Predictive Assays

- Signature patterns of exposure
- Signature patterns of adverse effects
- Proteomic analysis
- Biomarker identification

Long-term Goals

Knowledge Base

- Gene expression database
- Analysis tools (informatics)
- Query tools
- Relational interfaces and annotation

Partnerships in Knowledge Base Development